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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/508,510	05/26/2000	MICHAEL TSCHOPE	P100564-0000	7619

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EXAMINER	
ANDRES, JANET L	

ART UNIT	PAPER NUMBER
1646	

DATE MAILED: 05/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/508,510	TSCHOPE ET AL.	
	Examiner	Art Unit	
	Janet L. Andres	1646	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9,11-14,17-23,25-29,32 and 33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9,11-14,17-23,25-29,32 and 33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 23 March 2004 has been entered. Claims 1-9, 11-14, 17-23, 25-29, and 32-33 are pending and under examination in this office action. The text of those sections of Title 35, U.S. Code, not included in this action can be found in a prior office action.

Information Disclosure Statement

2. The information disclosure statement filed 7 October 2003 has been considered in full and the form 1449 is attached.

Claim Rejections/Objections Withdrawn

3. The rejection of claims 1-14, 17-23, and 26-31 under 35 U.S.C. 112, 2nd paragraph, as indefinite in the recitation of "*in vitro* biological activity" and in the use of the phrase "optionally, at least one" is withdrawn in response to Applicant's amendment.

Claim Rejections Maintained/New Grounds of Rejection/Objection

4. The amendment filed 23 March 2004 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: the limitation of "less than 12 x 10^6 U/ml".

Applicant is required to cancel the new matter in the reply to this Office Action.

5. Claims 1, 2, 4-8, 13, 14, and 21-23 are newly rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. These claims are now drawn to concentrations of IFN-β of less that 12 x 10^6 U/ml. There is no support in the specification for this particular concentration range.

6. Claim 11 is newly rejected under 35 U.S.C. 112, second paragraph, as indefinite in the recitation of "the active ingredient is free from human or animal polypeptides". IFN-β is an animal polypeptide and thus a composition of IFN-β cannot be free from animal polypeptides. In addition, humans are animals and thus "human or animal" is indefinite.

7. Claims 1, 2, 4-9, 13, 14, 21-23, and 26 are newly rejected under 35 U.S.C. 112, second paragraph, as indefinite in the recitation of "U".

Applicant states in the arguments of 17 June 2002 that the claims recite IU. Applicant states in the arguments of 7 May 2003 that the claims recite U/ml. Applicant states in the arguments of 23 March 2004 that the claims recite units. The claims actually refer to U, or units, not IU, or international units, except for claims 23 and 29, which recite IU. The specification refers only to U, or units, with no definition. There is an art-standard definition of international units, or IU of interferons. While units, or U, have been used to describe an activity of 10^{-6} IU, that is, one one-millionth of an international unit, the Examiner does not believe this to be an art-standard definition. Thus it is not possible to determine the metes and bounds of claims, what

support for the claimed limitations is provided by the specification, and how the claimed limitations are related to the prior art.

8. The rejection of claims 1, 2, 4-8, 13, 14, and 21-23 under 35 U.S.C. 102(b) as anticipated by EP 0 529 300 B1 is maintained as a rejection under 102/103 for reasons of record with respect to the 102(b) rejection in the previous office action. See MPEP §2131.03:

> A 35 U.S.C. 102 /103 combination rejection is permitted if it is unclear if the reference teaches the range with "sufficient specificity." The examiner must, in this case, provide reasons for anticipation as well as a motivational statement regarding obviousness. Ex parte Lee 31 USPQ2d 1105 (Bd. Pat. App. & Inter. 1993) (expanded Board).

A 102/103 rejection is appropriate for two reasons: it is unclear what concentrations Applicant is claiming (see paragraph 7), and one measure of concentration specified in EP 0 529 300 B1, "I.E" (p. 5, lines 20, 21, 26, and 27), does not appear to be defined.

Applicant states that the exclusion of human serum albumin obviates the rejection of the claims under 35 U.S.C. 102(b). However, there is nothing in the claims as currently amended to exclude the presence of other agents such as PVP, which is taught by EP 0 529 300 B1 to be an alternative stabilizing agent (p. 5, lines 11-12). The phrase "consisting essentially of" does not exclude additional elements that do not change the nature of the invention; see MPEP §2111.03:

> For the purposes of searching for and applying prior art under 35 U.S.C. 102 and 103, absent a clear indication in the specification or claims of what the basic and novel characteristics actually are, "consisting essentially of" will be construed as equivalent to "comprising."

Furthermore, EP 0 529 300 B1 does not teach that either additive is necessary: Example 4 teaches a carrier only for purposes of lyophilization. Example 3 teaches that liquid solutions are stable without carriers. While example 3 only recites certain concentrations, there is nothing in EP 0 529 300 B1 that excludes any ranges from these preparations. Furthermore, as stated

above, there is no definition of a "unit" in the instant specification. Thus there is nothing in the claims that distinguishes the claimed compositions from what is taught by EP 0 529 300 B1. If a distinction between the claimed concentrations and those used exemplified in EP 0 529 300 B1 exists, it would still be obvious to use presumably lower concentrations of IFN-β claimed in the compositions of EP 0 529 300 B1, because EP 0 529 300 B1 teaches no lower limits to the concentration in liquid solutions, and appears to teach a range of pharmaceutically acceptable concentrations on p. 5 (lines 25-26) that include lower concentrations than those exemplified.

9. The rejection of claims 3, 9, 11, 12, 17-20, and 25-29 under 35 U.S.C. 103(a) as unpatentable over EP 0 529 300 B1 in view of the Patel patent is maintained for reasons of record in the previous office actions and applied to new claims 32 and 33.

Applicant argues that Patel does not teach interferon β. Applicant argues that there are a number of fundamental differences between IFN-α and IFN-β and that the sequnec homology is only 35%. Applicant further argues that IFN-β is glycoslylated and that IFN-α consists of a number of subtypes that are generally not glycosylated. Applicant argues that non-glycosylated IFN-β is not soluble at neutral pH, unlike glycosylated IFN-α, and thus the effects of methionine on glycosylated IFN-β are difficult to predict. Applicant further argues that Patel teaches variability in the effects of methionine and that one of skill in the art would not turn to the teachings of Patel to stabilize IFN-β solutions.

Applicant's arguments have been fully considered but have not been found to be persuasive. Patel et al teaches stabilization of three different proteins, GM-CSF, IFN-α, and IL-4, in figures 1, 2, and 4. Patel explicitly teaches that the method can be used for all interferons in column 2, lines 45-57. Thus, while IFN-β and IFN-α are, as Applicant states, distinct in

structure, one of skill in the art would expect IFN-β to be stabilized by methionine because Patel states that it can be. One of skill in the art would further expect that it could be stabilized by methionine because Patel teaches that other, unrelated proteins are. That some variability was observed would not serve to teach away from modifying the invention of EP 0 529 200 B1, since success is taught with all three proteins.

NO CLAIM IS ALLOWED.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janet L. Andres whose telephone number is 571-272-0867. The examiner can normally be reached on Monday-Thursday and every other Friday, 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Kunz can be reached on 571-272-0887. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Janet L. Andres, Ph.D.
Primary Examiner

20 May 2004

JANET ANDRES
PATENT EXAMINER